REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Drawing Issues

Applicants are resubmitting Fig. 3. The figure previously submitted was not part of this application, and was mistakenly placed in this file. The correct Fig. 3 is a chart that depicts the benefits of the present invention. The chart graphically shows that the products costing the business the most money are not necessarily the lowest yielding products. Specification, p.13, ll.21-23. The correct Fig. 3 shows a tabulation of yield management after implementing the cost yield measurement of the present invention. Specification, p.13, ll.5-6. The Fig. 3 chart comprises columns A-I, as described in the specification. Specification, p.13, ll.7-17. Applicants respectfully submit that the Fig. 3 submitted with the application is the wrong figure, and is not at all relevant to the instant invention. Applicants submit the correct Fig. 3, which is completely supported by the specification, as noted above. Applicants submit that the correct Fig. 3 does not add any new matter.

Rejections under 35 U.S.C. § 102

Claims 1-21 stand rejected under 35 U.S.C. § 102 as being anticipated by Rothschild, et al., U.S. Patent No. 5,946,661. Applicants respectfully traverse this rejection. Rothschild teaches a cycle time method to obtain cost, efficiency, bottleneck, and value creation information. Rothschild's "throughput [dollar] $ value of the bottleneck" is determined by calculating "*processing times of products* in process steps

responsive to the time and quantity data." '661 Patent, col.3, ll.18-21 (emphasis added). Rothschild calculates and utilizes the total processing time. "A total processing time for a process step is then obtained by summing the processing times associated with each product." '661 Patent, col.3, ll.21-23. In contrast, the present invention is process time independent. Specifically, the present invention calculates time invariant quantities, such as: the number of parts expected to be shipped (number of parts started multiplied by the target yield); the number of parts actually shipped (number of parts started multiplied by the actual yield); and the quantity of parts lost due to yield (number of parts actually shipped minus the number of parts expected to be shipped). Specification, p.11, ll.26-29. Whereas, Rothschild's calculations depend on time rates, thruput rates for each process step, and cycle times. '661 Patent, col.3, ll.18-35. The goal of the Rothschild invention is to identify and reduce time-variant "bottlenecks" in the production line process. Importantly, Rothschild defines these bottlenecks in units of time. "The bottleneck step is the step which yields the fewest quantity or value per unit time, such as minute of process time." '661 Patent, col.7, ll.13-15. The Rothschild invention calculates the cost of manufacturing a product (apart from raw material cost) by using a Bottleneck Time Charge (BTC). The BTC reflects the actual cost of manufacturing by absorbing the expenses of the manufacturing plant over the *production time* in the plant's bottleneck. '661 patent, col.7, ll.62-67. In contrast, the present invention concerns itself with the output of the production (yields and cost of yields) not time-variant bottlenecks in the production lines during the production run.

The Examiner states that Rothschild discloses a method for controlling production or manufacturing costs, including *calculating a cost of yield measurement* for each of said plurality of processes by multiplying the unapproved units number by

the unit production cost for each of the units. The Examiner cites Rothschild for support, column 4, lines 1-9. Applicants respectfully disagree. Rothschild calculates bottleneck time charge and bottleneck processing time, not the cost of yield. Rothschild does calculate product yield, but not the cost of yield as defined in the present invention. Ultimately, it is the bottleneck time cost that Rothschild is interested in. Rothschild defines a factory bottleneck as either: 1) a thruput [dollar] value of products; or 2) a physical product flow rate. '661 Patent, col.3, ll.18-20. The bottleneck cost is not the cost of yield, as defined in the present invention or in Rothschild. Rothschild uses the total product yield, raw material cost, and bottleneck processing time to obtain a time-variant bottleneck cost. The cost of yield is not disclosed, taught, or suggested by Rothschild.

The Examiner also states that Rothschild compares the cost of each unapproved unit for each of the processes, citing the '661 Patent, column 13, lines 53-56. Applicants respectfully disagree. In the cited section, Rothschild determines a factory bottleneck from the physical product flow rate. Rothschild calculates the processing time for all workorders in the process step(s), and divides the volume quantities by the processing time for the same workorders to determine the process flow rate. '661 Patent, col.13, ll.56-62. Importantly, Rothschild is concerned with the process flow rate of a process bottleneck or process slow down, not specifically unapproved units. Rothschild then compares the product flow rates themselves, not the cost of each unapproved unit for each of the processes. '661 Patent, col.13, ll.63-64.

The Examiner also states that Rothschild provides for an expected yield measurement for each of the processes, citing the '661 Patent, column 14, lines 15-20. Applicants again respectfully disagree. As stated in the '661 Patent, Rothschild

computes the net yield, not an expected yield. Rothschild's net yield is calculated from equation 19, which gives the product of individual process line yield values. The net yield (NYs_x) is not an expected yield results. It represents either a real time yield or a past yield result. Rothschild remains concerned with identifying and eliminating production line bottlenecks, not measuring the actual yield to the target yield. Presumably, Rothschild's process will improve the actual yield through the elimination of bottlenecks; however, the Rothschild invention does not teach or disclose a cost of yield calculus to obtain its result. In the present invention, the expected yield or target yield is the expected number of good parts generated for a given number of started parts for each process of each product. Specification, p.10, ll.7-10. It is an important factor in determining the cost of yield.

The Examiner further states that Rothschild calculates an expected approved units number by multiplying the started units number by the expected yield measurement, citing the '661 Patent, column 4, lines 1-9, for support. Applicants disagree. As discussed above, Rothschild does not calculate an expected yield value. Consequently, an expected approved units number is not calculated. The cited portion of the '661 Patent discusses total product yield (actual yield), bottleneck time charge, and bottleneck processing time. A bottleneck time cost is calculated in response to the bottleneck time charge and bottleneck processing time; however, this cost is completely different from, and has no direct relation to, a cost of yield measurement.

The Examiner states that Rothschild provides a comparison of the cost of yield with the actual yield for each of the plurality of processes, citing the '661 Patent, column 2, line 63 through column 3, line 6. Applicants respectfully disagree. This citation describes an objective of the Rothschild invention, to wit: "provide information

concerning cost, efficiency, bottlenecks, scrap and value creation in particular process steps in manufacturing ... obtained continuously in real-time using actual production information without requiring a priori costing studies." '661 Patent, col.2, l.63 - col.3, l.6. This section is silent regarding any comparison of the cost of yield with the actual yield. Rothschild does compare the product flow rates ('661 Patent, col.13, ll.63-64), but does not anywhere disclose or suggest a cost of yield measurement or a comparison of the cost of yield to the actual yield.

Regarding claims 6-9 and 13-15, the Examiner states that Rothschild discloses the method of claim 5 including the step of calculating a subsequent actual unapproved units number for a plurality of processes by subtracting the subsequent expected approved units number from a subsequent actual approved units number, citing the '661 Patent, column 7, lines 62-67, in support. Rothschild does not disclose or suggest a calculation step that subtracts an unapproved unit number from an actual approved units number. Rothschild calculates the cost of manufacturing a product using a bottleneck time charge. The bottleneck time charge represents the actual cost of manufacturing by absorbing the expenses of the manufacturing plant over the production *time* in the plant's bottleneck. Rothschild is not comparing any actual yield to any expected yield. Rather, Rothschild measures the cost of having a bottleneck on a production line. Although important to production line managers, this information is not the same as the cost of yield measurement of the present invention.

Applicants submit that the present invention, claims 1-21, remain patentably distinct over the prior art of Rothschild for the reasons stated above. It is respectfully submitted that the application is in a condition where allowance of the entire case is

proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,

Robert Curcio
Reg. No. 44,638

DeLIO & PETERSON, LLC
121 Whitney Avenue
New Haven, CT 06510-1241
(203) 787-0595

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Name: Marian R. Capelli Date: February 6, 2004 Signature: Marian R. Capelli

ibmf100319000amdA